Indiana Department of Education
Academic Standards Course Framework

INTRODUCTION TO COMPUTER SCIENCE

Introduction to Computer Science allows students to explore the world of Computer Science. Students will gain a broad understanding of the areas composing computer science. Additionally, there will be a focus on the areas of computer programming, gamming/mobile development, and artificial intelligence/robotics.

- DOE Code: 4803
- Recommended Grade Level: 9, 10
- Recommended Prerequisite: None
- Credits: 1 to 2 semester course, 1 credit per semester, 2 credits maximum
- Counts as a Directed Elective or Elective for all diplomas

Career and Technical Student Organizations (CTSOs)
Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in Business Professional of America, DECA, or Future Business Leaders of America, the CTSOs for this area.

Content Standards

Domain – Computer Science
Core Standard 1 Students create an understanding of computer science, in general, and learn how it impacts their everyday lives.

Standards

ICS-1.1	Create a definition of computer science
ICS-1.2	Define computational thinking
ICS-1.3	Examine the history of computers and computer science
ICS-1.4	Investigate trends in computer science
ICS-1.5	Summarize ethical issues within computer science
ICS-1.6	Identify the careers in computer science

Domain – Programming and Development
Core Standard 2 Students connect the process of developing a computer application with the skills needed during the development process to have better understanding of what it takes to build an computer application.

Standards

ICS-2.1	Apply the program design process and use data types and variables
ICS-2.2	Analyze conditional decision making and iteration
ICS-2.3	Use loops and object oriented concepts
ICS-2.4	Formulate algorithms using programming structures
ICS-2.5	Assess a program by testing and verifying accuracy
ICS-2.6	Construct a user interface for a program through coding

ICS-2.7 Evaluate the use of graphics within a program

ICS-2.8 Examine the development of websites, mobile applications, and games

Domain – Data

Core Standard 3 Students critique the types of data and how it is created, stored, and used by computers.

Standards

ICS-3.1 Identify types of data

ICS-3.2 Differentiate between structures of data

ICS-3.3 Use a database in the creation of a program

Domain – Computers, Devices, and Other Technologies

Core Standard 4 Students analyze computer, devices, and other technologies to build an understanding of their impact of society and how to use them appropriately.

Standards

ICS-4.1 Recall the features of computers

ICS-4.2 Identify mobile devices and how to use them appropriately

ICS-4.3 Recognize the impact of the Internet on society

ICS-4.4 Investigate the use of artificial intelligence by individuals and society

ICS-4.6 Examine the development of robotics

ICS-4.7 Examine computer security issues and the field of cryptography

Domain – Collaboration

Core Standard 5 Students apply concepts of collaboration to complete various tasks.

Standards

ICS-5.1 Design a solution to a problem by working in a team

ICS-5.2 Compare tools that can be used to collaborate